

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A vacuum processing apparatus for generating a plasma ~~including~~ comprises a vacuum processing chamber having a stage for mounting a substrate to be subjected to a plasma processing ~~processed~~, and a carrier port for providing access to and from ~~carrying the substrate onto and off the stage for subjecting the substrate on the stage to a plasma processing in the vacuum processing chamber~~, said apparatus, comprising:

a deposit shield disposed along an inner peripheral wall of the vacuum processing chamber, said deposit shield ~~and~~ having a notch portion at a position facing the carrier port;

a shutter being shaped to fit ~~having a shape fitted~~ into the notch portion of the deposit shield and being configured to be elevated, wherein, when the shutter is fitted inside the notch portion of the deposit shield, having an inside surface of the shutter is substantially flush with an inside surface of the deposit shield ~~a same inside curvature as an even curvature of an inner surface of the deposit shield when the shutter is fitted into the notch portion, and being configured to be elevated;~~

a sealing groove being configured to receive an O-ring therein, said sealing groove being formed in an end face of the shutter opposing a flat side face of the deposit shield; and

a ~~conduction~~ groove being configured to receive therein a spiral seal made of metal, said ~~conduction~~ groove formed in the end face of the shutter parallel to and outside of the sealing groove, the spiral seal electrically connecting the deposit shield to the shutter,

wherein each of the deposit shield and the shutter is configured to have a ground potential, the shutter is configured to be retreated from the notch portion when moving the substrate in and out of the stage through the carrier port and configured to be fitted into the notch portion of the deposit shield when the plasma processing is conducted, thus

surrounding a plasma generation region by ~~the~~ an even curvature of the shutter and deposit shield thereby producing a uniform plasma.

Claim 2 (Currently Amended): A vacuum processing apparatus for generating a plasma ~~including~~ comprises a vacuum processing chamber having a stage for mounting a substrate to be subjected to a plasma processing process, and a carrier port for providing access to and from ~~carrying the substrate onto and off the stage for subjecting the substrate on the stage to a plasma processing in the vacuum processing chamber~~, said apparatus, comprising:

a deposit shield disposed along an inner peripheral wall of the vacuum processing chamber, said deposit shield ~~and~~ having a notch portion at a position facing the carrier port;

a shutter being shaped to fit ~~having a shape fitted~~ into the notch portion of the deposit shield and being configured to be elevated, wherein, when the shutter is fitted inside the notch portion of the deposit shield, having an inside surface of the shutter is substantially flush with an inside surface of the deposit shield ~~a same inside curvature as an even curvature of an inner surface of the deposit shield when the shutter is fitted into the notch portion, and being configured to be elevated~~;

a shutter mechanism configured to raise the shutter into the notch portion of the deposit shield when the plasma is generated in the vacuum processing chamber, thereby closing the carrier port,

a sealing groove being configured to receive an O-ring therein, said sealing groove being formed in an end face of the shutter opposing a flat side face of the deposit shield; and

a ~~conduction~~ groove being configured to receive therein a spiral seal made of metal, said ~~conduction~~ groove formed in the end face of the shutter parallel to and outside of the sealing groove, the spiral seal electrically connecting the deposit shield to the shutter,

~~wherein when the plasma is generated in the vacuum processing chamber, the shutter is raised by a shutter mechanism to be fitted into the notch portion thereby closing the carrier port and forming the same inner surface curvature as the even curvature of the inner surface of the deposit shield, and~~

wherein further each of the deposit shield and the shutter is configured to have a ground potential, the shutter is configured to be retreated from the notch portion when moving the substrate in and out of the stage through the carrier port and configured to be fitted into the notch portion of the deposit shield when the plasma processing is conducted, thus surrounding a plasma generation region by the even curvature of the shutter and deposit shield thereby producing a uniform plasma.

Claim 3 (Original): A vacuum processing apparatus for generating a plasma including comprises a vacuum processing chamber having a stage for mounting a substrate to be subjected to a plasma processing process, and a carrier port for providing access to and from carrying the substrate onto and off the stage for subjecting the substrate on the stage to a plasma processing in the vacuum processing chamber, said apparatus, comprising:

a deposit shield disposed along an inner peripheral wall of the vacuum processing chamber, said deposit shield and having a notch portion at a position facing the carrier port;

a shutter being shaped to fit ~~having a shape fitted~~ into the notch portion of the deposit shield and being configured to be elevated, wherein, when the shutter is fitted inside the notch portion of the deposit shield, having an inside surface of the shutter is substantially flush with an inside surface of the deposit shield ~~a same inside curvature as an even curvature of an inner surface of the deposit shield when the shutter is fitted into the notch portion, and being configured to be elevated;~~

a sealing groove being configured to receive an O-ring therein, said sealing groove being formed in an end face of the shutter opposing a flat side face of the deposit shield; and
a ~~conduction~~ groove being configured to receive therein a spiral seal made of metal, said ~~conduction~~ groove formed in the end face of the shutter parallel to and outside of the sealing groove, the spiral seal electrically connecting the deposit shield to the shutter.

Claim 4 (Original): The vacuum processing apparatus according to claim 3, wherein a disk-shaped evacuation plate is disposed around the stage, and the shutter and the evacuation plate are brought into contact with each other and electrically connected to each other when the shutter is raised.

Claim 5 (Original): The vacuum processing apparatus according to Claim 3, wherein each of the deposit shield and the shutter comprises a heating mechanism.

Claim 6 (Currently Amended): A vacuum processing apparatus for generating a plasma ~~including~~ comprises a vacuum processing chamber having a stage for mounting a substrate to be subjected to a plasma processing ~~processed~~, and a carrier port provided on a peripheral wall of the vacuum processing chamber for providing access to and from ~~carrying~~ the substrate onto and off the stage for ~~subjecting the substrate on the stage to a plasma processing in the vacuum processing chamber~~, said apparatus, comprising:

a deposit shield disposed along an inner peripheral wall of the vacuum processing chamber, said deposit shield ~~and~~ having a notch portion at a position facing the carrier port, the notch having an end face having an L-shape cross section, the end face of the L-shape cross section having a convex outer periphery;

a shutter being shaped to fit ~~having a shape fitted~~ into the notch portion of the deposit shield and being configured to be elevated, wherein, when the shutter is fitted inside the notch portion of the deposit shield, having an inside surface of the shutter is substantially flush with an inside surface of the deposit shield ~~a same inside curvature as an even curvature of an inner surface of the deposit shield when the shutter is fitted into the notch portion, and being configured to be elevated;~~

a sealing groove being configured to receive an O-ring therein, said sealing groove being formed in an end face of the shutter opposing a flat side face of the deposit shield; and

a ~~conduction~~ groove being configured to receive therein a spiral seal made of metal, said ~~conduction~~ groove formed in the end face of the shutter parallel to and outside of the sealing groove, the spiral seal electrically connecting the deposit shield to the shutter.

Claim 7 (Original): The vacuum processing apparatus according to claim 6, wherein a disk-shaped evacuation plate is disposed around the stage, and the shutter and the evacuation plate are brought into contact with each other and electrically connected to each other when the shutter is raised.

Claim 8 (Original): The vacuum processing apparatus according to claim 6, wherein each of the deposit shield and the shutter comprises a heating mechanism.

Claim 9 (Currently Amended): A vacuum processing apparatus for generating a plasma ~~including~~, comprises a vacuum processing chamber having a stage for mounting a substrate to be subjected to a plasma processing ~~processed~~, and a carrier port provided on a peripheral wall of the vacuum processing chamber for providing access to and from ~~carrying~~

~~the substrate onto and off the stage for subjecting the substrate on the stage to a plasma processing in the vacuum processing chamber,~~ said apparatus, comprising:

a deposit shield disposed along an inner peripheral wall of the vacuum processing chamber, said deposit shield having a first heating mechanism; and

a shutter configured to be elevated along the inner peripheral wall of the vacuum processing chamber, said shutter having a second heating mechanism,

wherein each of the deposit shield and the shutter is configured to have a grounded potential, the shutter is configured to be retreated when the substrate is moved in and out of the stage through the carrier port and configured to be abutted on the deposit shield when the plasma processing is conducted, thus surrounding a plasma generation region by a substantially flush curvature formed by an inside surface of the shutter and an inside surface of the deposit shield ~~an even curvature of the shutter and deposit shield~~ thereby generating a uniform plasma.

Claim 10 (Original): The vacuum processing apparatus according to claim 9, wherein a disk-shaped evacuation plate is disposed around the stage, and the shutter and the evacuation plate are brought into contact with each other and electrically connected to each other when the shutter is raised.